607/93

GENERAL ELECTRIC COMPANY

GENERAL OFFICE
SCHENECTADY, N. Y.

806 Fifteenth St., N. W.
WASHINGTON, D. C.

April 20th, 1937.

Mr. E. W. Kirby,
U. S. Patent Office,
Commerce Building,
Washington, D. C.

Dear Sir:

In accordance with your request, I am pleased to forward herewith one copy each of Technical Sheets GET-477B, GET-478B, GET-479 and GET-480. These sheets cover the most commonly used phototubes. It is possible that we have other special tubes of which I do not have a record immediately available here.

Should you have further detailed questions, I believe Mr. F. G. Toye, Patent Department of General Electric Company, Munsey Building, Washington, D. C., will be able to help you.

Very truly yours,

Thos. B. Jacocks

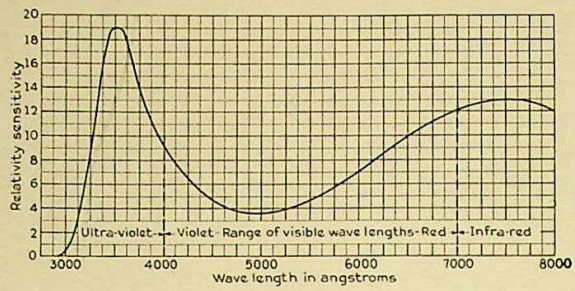
T. B. JACOCKS
WASHINGTON OFFICE.

TBJ:TP

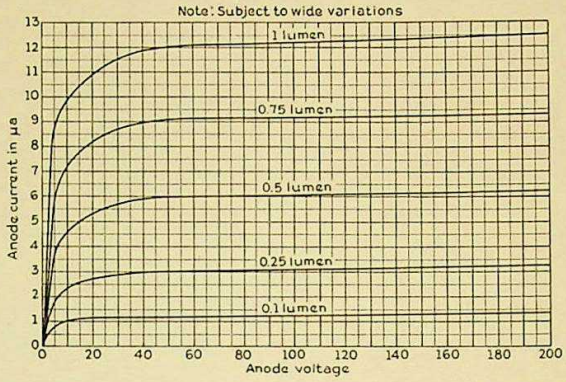
607/93

GENERAL ELECTRIC

Phototube PJ-22 -- Description and Rating



Color Sensitivity Characteristic,
Constant Energy for Phototube PJ-22
H-4941794 12-4-31

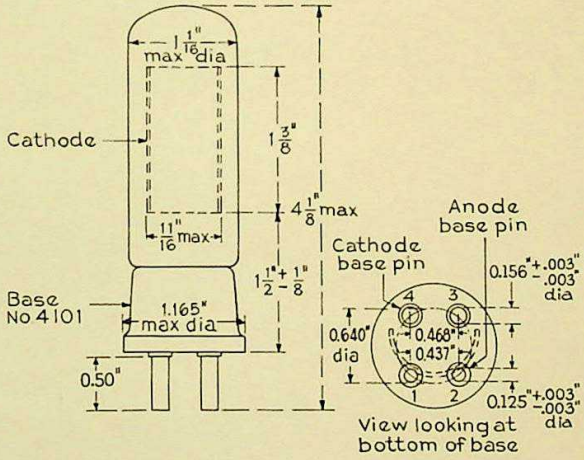


Anode Voltage vs Anode Current
for Phototube PJ-22
H-4359203 6-19-33

The PJ-22 is a vacuum phototube designed for general use. The active surface is caesium deposited on oxidized silver. This tube is particularly useful where a linear response to incident light is required. When the color of the light is held constant, the current is proportional to the light to a high degree of accuracy. Since this tube is of the vacuum type, the current is nearly independent of voltage above about 25 volts and, hence, is not affected by supply-voltage variation in this region. If low values of light and voltage are used, this tube can be expected to maintain a very nearly constant output over long periods of time.

TECHNICAL INFORMATION

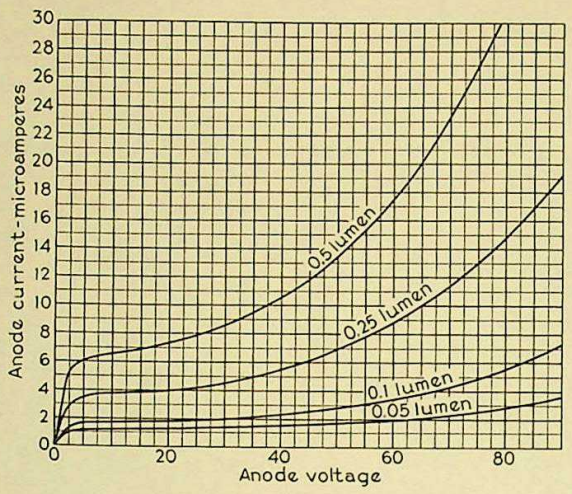
Number of Electrodes	2
Maximum Anode Voltage, d-c or peak a-c	200
Normal Anode Voltage, recommended for max. stability	25
Maximum Anode Current, microamperes	20
Average Sensitivity at Anode Voltage of 90, microamperes per lumen	14
Interelectrode Capacitance, μμf	4
Window Area, square inches	0.9
Maximum Operating Temperature, ambient C	100
Net Weight, ounce	1/2
Shipping Weight, ounces	8
Installation and Operation	GEH-990



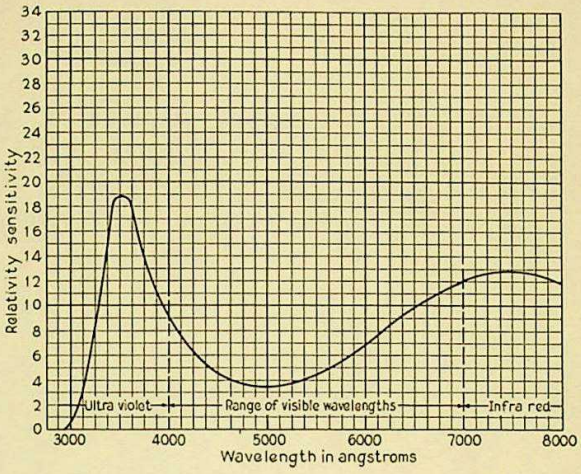
Outline Phototube PJ-22
K-4373307 July 25,1932

GENERAL ELECTRIC

Phototube PJ-23 - - Description and Rating



Anode Voltage vs Anode Current
for Phototube PJ-23
H-4392610 June 19, 1933

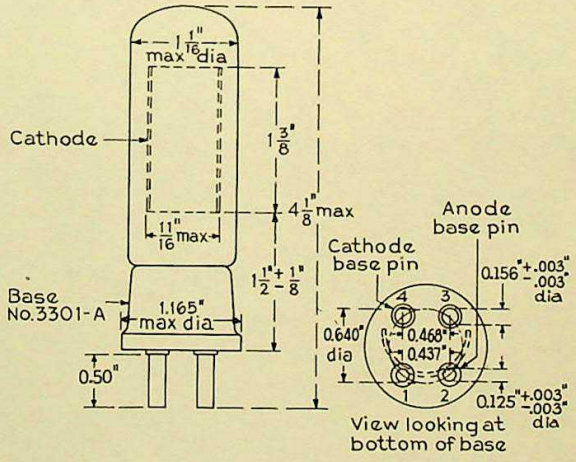


Color Sensitivity Characteristic,
Constant Energy for Phototube PJ-23
H-4392618 4-2-32

The PJ-23 is a gas-filled phototube designed for general use. The active surface is caesium deposited on oxidized silver. Argon gas is used to produce the ionization, which augments the primary electron emission. This tube is useful in all cases where it is necessary to obtain a greater output than is possible with the vacuum type of phototube.

TECHNICAL INFORMATION

Number of Electrodes	2
Maximum Anode Voltage, d-c or peak a-c	90
Maximum Anode Current, microamp	20
Average Sensitivity at Anode Voltage of 90, microamp per lumen	50
Interelectrode Capacitance, μμf	4
Gas Ratio (Ratio of Anode Current at 90 volts to Anode Current at 25 volts) maximum	10
Window Area, square inches	0.9
Maximum Operating Temperature, ambient, deg C	65
Net Weight, ounces approx	1/2
Shipping Weight, ounces approx	8
Installation and Operation	GEH-990



Outline Phototube PJ-23
K-4373307 5-25-32

GENERAL ELECTRIC COMPANY, SCHENECTADY, N. Y.

GENERAL ELECTRIC

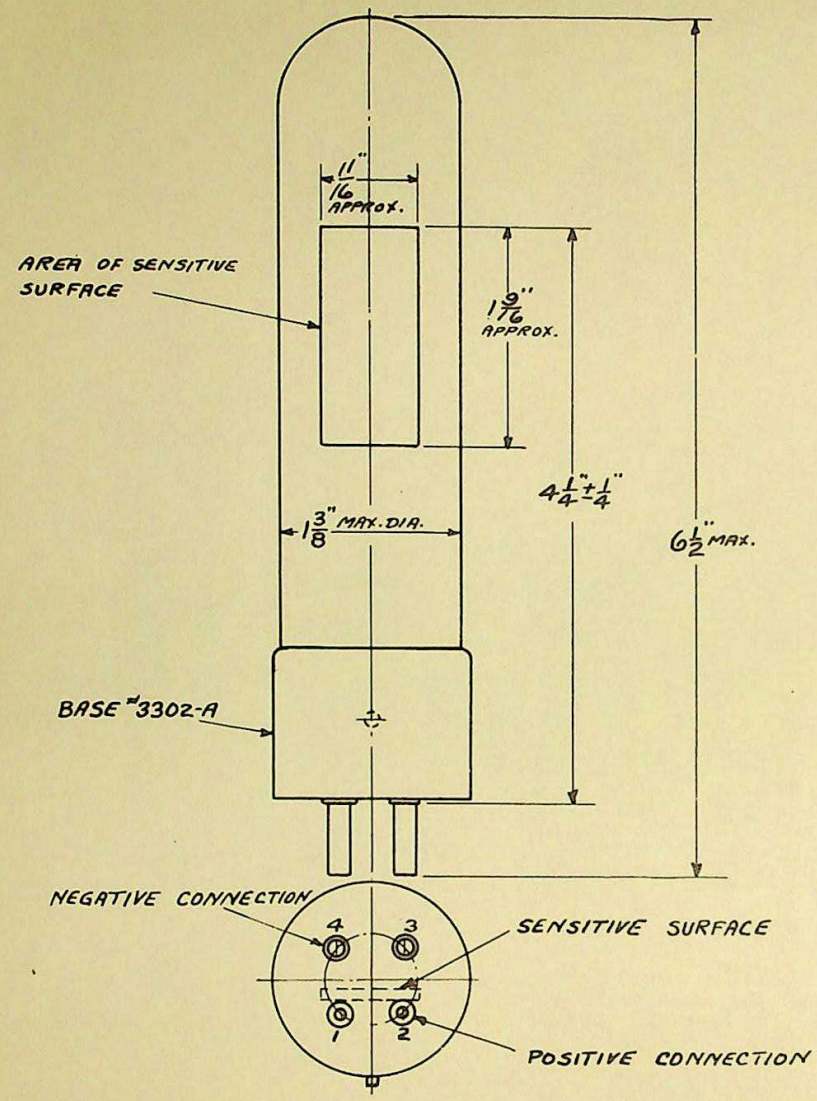
September 20,1932

SELENIUM TUBE FJ-31

The FJ-31 is a light sensitive tube of the type whose resistance varies with light. The sensitive material is a thin layer of selenium deposited between two electrodes on a glass plate. This tube is useful in applications requiring a larger amount of power output than could be obtained using Phototubes. The tube has a dark current determined by the voltage and its dark resistance. The tube's speed of response to light is somewhat slower than that of Phototubes and therefore its full output when exposed to an alternating light source cannot be realized.

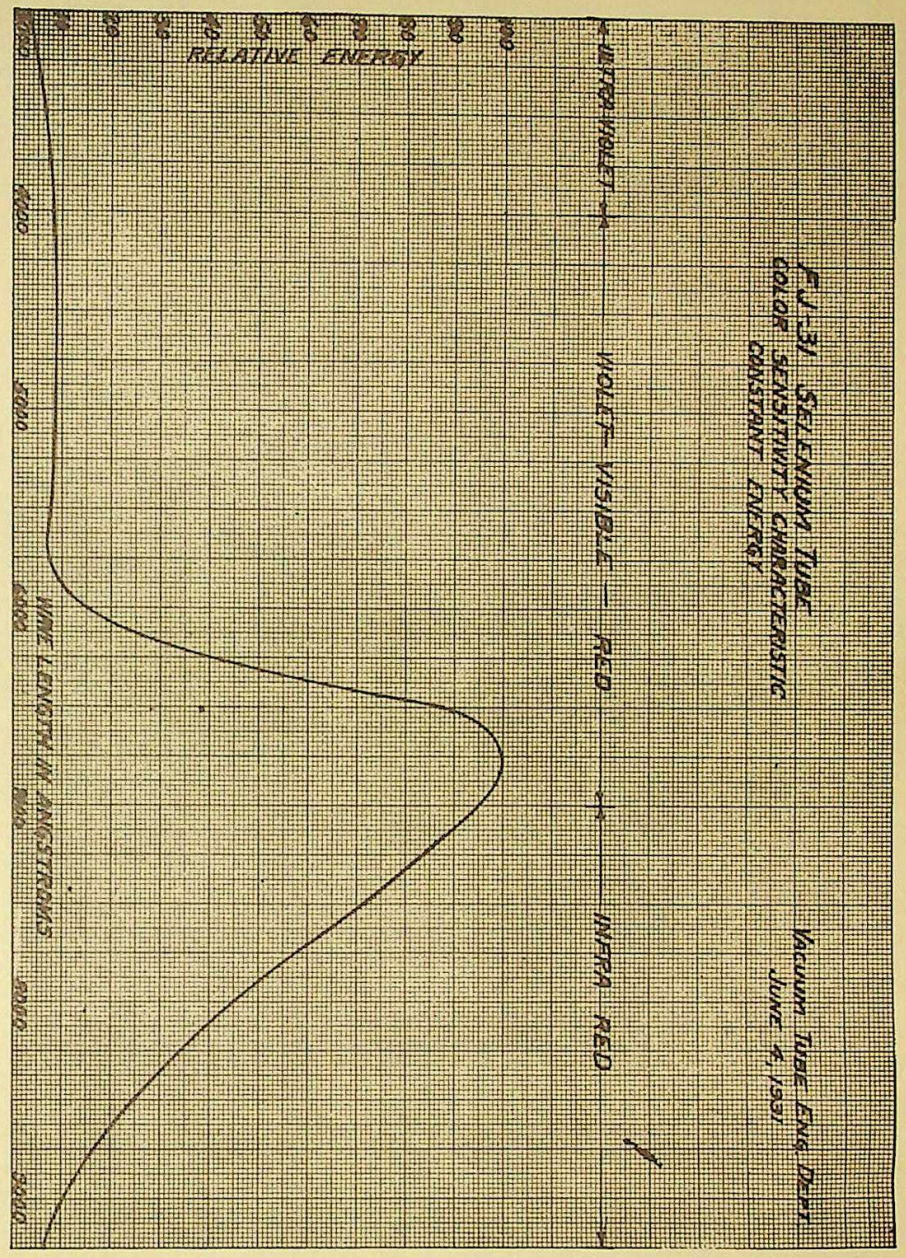
TECHNICAL INFORMATION

Designed for	General Purpose
Maximum Voltage (d-c or a-c) (r-m-s)	125
Maximum Current (milliamperes)	0.5
Average Characteristics at 100 volts	
Resistance with 100 Foot-Candles incident on element (megohms)	0.75
Ratio Light Resistance to Dark Resistance	6
Maximum Overall Dimensions	
Length (inches)	6-1/2
Diameter(")	1-7/16
Active Surface (inches)	1-9/16 x 11/16
Base Type Number	3302



FJ 31 SELENIUM TUBE

OUTLINE



GENERAL ELECTRIC

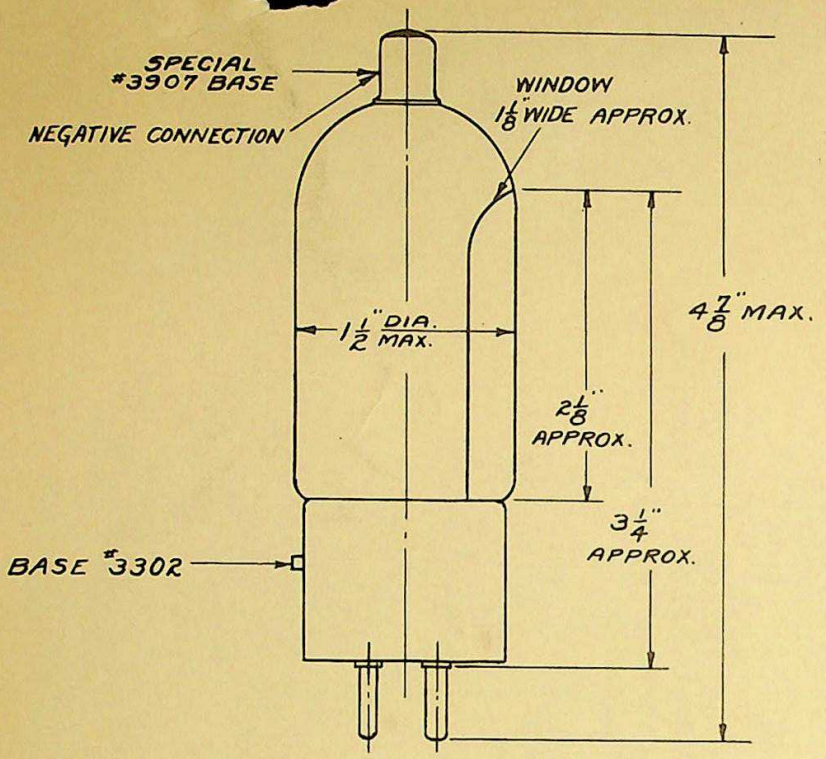
September 20,1932

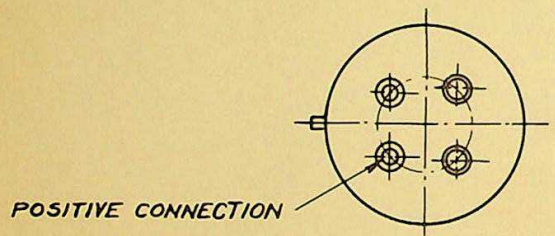
PHOTOTUBE FJ-76

The FJ-76 is a vacuum Phototube designed to have a high response to ultra-violet light. The bulb is of quartz and the active surface is sodium deposited on the inside wall. The tube finds its usefulness in applications requiring a response to light of wavelengths between 2000 and 4000 angstroms. It has practically no response to light of wavelengths longer than 4000 angstroms. Since the tube is of the vacuum type the output is nearly independent of voltage above 25 volts, and if low values of light and voltage are used, the output can be expected to remain constant over long periods of time.

TECHNICAL INFORMATION

Designed for	Ultra-violet Photometry
Number of Electrodes	2
Maximum Anode Voltage	200
Normal Anode Voltage (Recommended for maximum stability)	67.5
Maximum Anode Current (microamperes)	50
Average Sensitivity at 67.5 Volts (Tube placed 25 in. from quartz BY Uviarc Burner operating at 320 watts and 68 - 72 volts) (microamps.)	12
Window Area (square inches) (approx.)	2
Maximum Overall Dimensions	
Length (inches)	4-7/8
Diameter (inches)	1-1/2
Base Type Numbers	3302 and special 3907
Bulb	Quartz





VIEW LOOKING AT BOTTOM OF BASE

FJ-76 & FJ-77 PHOTO-ELECTRIC TUBES

OUTLINE